## REMARKS/ARGUMENTS

The Examiner is thanked for the review of the application.

Claims 1 - 13 remain in this application. Claims 1, 2, 4 – 6, and 11 - 13 have been amended. New Claims 14 - 16 have been added. No new matter has been added.

In the Final Office Action dated November 9, 2005 the Examiner rejected Claims 1, 4 under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al. (6,094,641), and further in view of Ouimet et al. (6,078,893).

Regarding Claim 1 the Examiner has stated that, "Ouimet '641 discloses: an econometric engine for modeling sales as a function of price to create a sales model, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price]); a financial model engine for modeling costs to create a cost model, (col. 4, lines 52-53, [pricing model], which includes an activity-based costing module, (Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model, in this case, the module is inherent with Ouimet since Ouimet's system is computer-implemented and in order to create models, a module is necessary in a computerized system); wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity, (Col. 2, lines 5-17, determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity); and an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}]). Ouimet '641 fails to disclose a configuration to receive variable costs and fixed costs, but does disclose a pricing module in col. 4, lines 52-53. However, Ouimet '893 discloses: configured to receive variable costs and fixed costs, (col. 6, lines 42-61, shows that when a user selects a market model, it can be one with no price change or one that does not contain adjustable market model parameters, also shows the model using adjustable parameters, in this case, the parameters are directly proportional to the variables,

therefore, if the parameters are adjusted, so are the variables such as price.) Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market models can be represented by using values that change/are adjustable, and also do not need to contain adjustable values. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to receive variable costs and fixed costs with the motivation of creating both a fixed or variable market model."

Claim 1 has now been amended to read, in part with pertinent additions emphasized:

"an econometric engine for modeling internal sales as a function of price to create an internal sales model ,wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products;

a financial model engine for modeling costs to create a cost model which includes an activity-based costing module configured to receive variable costs and fixed costs, wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity including labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing; and

an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices."

Support for the amendments can be found in the specification as filed on page 60, lines 5 – 14. As amended, Claim 1 more distinctly delineates the novel aspects of the instant invention. Neither Ouimet et al. '641, nor Ouimet et al. '893 teach nor suggest modeling internal sales by clustering highly substitutable related products into sets for modeling. Rather, Ouimet '893 generates a demand model for individual products (not product sets) and then uses external market information to correct for noise in the product demand model. (Col 2, lines 10 – 18). The instant invention provides the advantage of relying solely upon internal product sales data to create the sales model.

The instant invention generates a sales model for the entire product set. A set of related products is defined to give a group of highly substitutable products (or items). (Specification, page 13, lines 11-13). The sales model is then generated to model sales for the group. This provides the advantage of decreasing process time and providing a more facile modeling scheme. (See specification, page 13, line 21 – page 14, line 1). Ouimet '893 does not teach nor suggest creating a related product set sales model. Furthermore, Ouimet et al. does not disclose any structure which is capable of modeling sales for a set of highly substitutable products as disclosed by the instant invention. Known sales models, like the one disclosed in Ouimet et al., model individual product sales. The novel sales model of the instant invention, on the other hand, models group sales.

Neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the internal market share model disclosed by the instant invention. Hence, base Claim 1, and claims 2, and 3, which are dependent upon Claim 1, are allowable over the cited art.

Regarding Claim 4, the Examiner has stated that "Ouimet '641 discloses: creating a sales model, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price]); creating a cost model, (col. 4, lines 52-53, [pricing model], which includes activity-based costing, Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model); wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity, (Col. 2, lines 5-17, determining the promotional cost by determining both optimum price and promotional activity, where the promotional cost represents the cost for each selected costing activity); generating the preferred set of prices for the plurality of products based on the sales model and cost model, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits, {optimization}]). Ouimet '641 fails to disclose the activity-based costing including fixed costs and variable costs, but does disclose a pricing module in col. 4, lines 52-53. However, Ouimet '893 discloses: the activity-based costing including fixed costs and variable costs, (col. 6, lines 42-61, shows that when a user selects a market model, it can be one with no price change or one that does not contain

adjustable market model parameters, also shows the model using adjustable parameters, in this case, the parameters are directly proportional to the variables, therefore, if the parameters are adjusted, so are the variables such as price). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market models can be represented by using values that change/are adjustable, and also do not need to contain adjustable values. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to receive variable costs and fixed costs with the motivation of creating both a fixed or variable market model."

Claim 4 has now been amended to read, in pertinent part:

"creating an internal sales model ,wherein said internal sales model clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products."

As discussed above, neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the internal market share model disclosed by the instant invention. Hence, base Claim 4, and claim 5, which is dependent upon Claim 4, is allowable over the cited art.

In the same Final Office Action the Examiner also rejected Claims 2, 3, 5 under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al. (6,094,641) as applied to Claim 1 above, and further in view of Ouimet et al. (6,078,893), and further in view of Ouimet et al. (6,308,162).

Regarding Claim 2, the Examiner has stated that "Ouimet '641 discloses: a price calculator connected to...the financial model engine, and the econometric engine, wherein the price calculator determines the preferred set of prices based on rule parameters, the sales model, and the cost model, (Col. 8, lines 18-20, [shows calculating], col. 5, lines 50-55 and 60-65, [see equations listed where calculating is done via the equations]); Ouimet '641 fails to disclose further wherein said rule parameters constrain the preferred set of prices to fall within limits conforming to business strategy, but does disclose determining a preferred set of prices as disclosed above. However, Ouimet '893 discloses: further wherein said rule parameters constrain the preferred set of prices to fall within limits conforming to business strategy, (Col. 1, lines 32-57, shows use of rule-based approach, and using a model-based approach to affect

pricing where tuning of a demand model is done for fluctuations), Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that rules are implemented when determining prices. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use rule parameters to constrain the preferred set of prices to fall within limits conforming to business strategy with the motivation of showing that prices can be determined according to a set of rules. Neither Ouimet '641 nor Ouimet '893 disclose a business rule tool, which stores a plurality of rule parameters, but Ouimet '641 does disclose a routine in col. 6, lines 6-8, where rules must be present in order to successfully process the routine. However, Ouimet '162 discloses the following: a business rule tool, which stores a plurality of rule parameters, (col. 1, lines 30-34, [rule based approach]). Ouimet '162 discloses this limitation in an analogous art for the purpose of showing that rules are used in an approach to optimize models. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize a rule tool with the motivation of going through the process of optimizing models to determine prices in a logical manner."

Claim 2 has now been amended to read, in pertinent part:

"a strategy implementation module, which stores a plurality of price limiting strategic considerations; and

a price calculator connected to the strategy implementation module, the financial model engine, and the econometric engine, wherein the price calculator determines the preferred set of prices based on price limiting strategic considerations, the sales model, and the cost model, further wherein said price limiting strategic considerations constrain the preferred set of prices to fall within limits conforming to business strategy."

Support for the amendments can be found on pages 103 – 107 of the specification as filed. Ouimet et al. '162 (col. 1, lines 30 – 47) mentions "rule-based" pricing systems to contrast them with model based pricing systems. The Ouimet '162 rule-based systems do not optimize the decision to maximize an objective such as profit or revenue, but instead activate a set of pre-defined rules to generate an action.

The novel strategy implementation module of the instant invention includes a mechanism whereby price limiting strategic considerations are included in the optimization. This ensures

that the preferred set of prices conforms to the business strategy of the user. This capability significantly enhances model based pricing systems by making their recommendations practical and actionable. Rule based systems, such as those taught by the prior art, specify a recipe for responding to specific stimuli like competitor price changes etc; they specify rules of action rather than rules that define strategy.

Regarding Claim 5, the Examiner has stated that "Ouimet '641 discloses: creating a sales model...(Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price]) for modeling sales of each demand group for a given time period, (Col. 5, lines 24-31, shows a demand model for a promotional activity that was occurring at the time of sale); Ouimet '641 fails to disclose creating a plurality of demand groups, wherein each demand group is a set of at least one product and wherein at least one of the demand groups is a set of at least two products, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5. However, Ouimet '893 discloses creating a plurality of demand groups, wherein each demand group is a set of at least one product and wherein at least one of the demand groups is a set of at least two products, (col. 8, lines 29-35, [selecting demand model by breaking up a retailer's market into smaller groups]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that groups are used to determine demand. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a plurality of demand groups with the motivation of optimizing models according to categories. Ouimet '641 fails to disclose creating a market share model for each product in each demand group for modeling the fraction of each demand group sales made up by each product for said time period, but does disclose the utilization of a demand model to optimize prices. However, Ouimet '893 discloses: creating a market share model for each product in each demand group for modeling the fraction of each demand group sales made up by each product for said time period, (col. 8, lines 35-37, [maximize market share by using demand model by breaking up market into smaller well-defined groups]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market share can be modeled and maximized by using the demand model. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a market share model for each product in each demand group for modeling the fraction of each demand group sales made up by each product for said time period with the motivation of determining market shares according to categories. Ouimet '641 fails to disclose modeling sales

for a given store, but does disclose the utilization of a demand model to optimize prices. However, Ouimet '162 discloses: Modeling sales for a given store, (col. 10, lines 34-39, using demand model to find price image of other stores compared to their store). Ouimet '162 discloses this limitation in analogous art for the purpose of showing that sales each store can have their own sales model. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to model sales for a given store for the purpose of determining sales information for that given store."

Claim 5 has now been amended to read, in pertinent part:

"creating a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further wherein each discrete sets of related products is a set of at least one product and wherein at least one of the discrete sets of related products is a set of at least two products;

creating an internal sales model for each discrete sets of related products for modeling sales of each discrete sets of related products for a given time period in a given store; and

creating a model for determining the fraction of internal sales of each discrete set of related products made up by each product for said time period." (emphasis added).

As discussed above, neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the internal market share model disclosed by the instant invention. Hence, Claim 5 is allowable over the cited art.

Furthermore, as amended, Claim 5 also more distinctly claims the novel aspect of the instant invention wherein an internal model is created wherein said internal market share model determines the fraction of the internal sales of each discrete set of related products comprised by each product. The cited art, on the other hand, disclose market share models which estimate individual products' market share of the external market. This is an entirely different approach from that taken in the instant invention, and one that does not suggest the novel model presented.

In the instant invention, the market share model is the fraction of a discrete set of related product's total sales comprised by a particular product within the set. (Specification, page 68, lines 5-8). The instant market share model does not predict a product's share of the external

market, but rather the internal analysis of a product's share of its group's total sales within the user's store or chain. Combined with the sales model discussed above, this novel aspect of the instant invention allows one skilled in the art to calculate demand as a function of price and then use internal market share to calculate a product's demand from the overall related product group demand. (Specification, page 115, lines 1-3).

Neither Ouimet '893, nor Ouimet '671 teach nor suggest the demand group sales model nor the internal market share model disclosed by the instant invention. Hence, Claim 5 is allowable over the cited art.

The Examiner has also rejected Claims 6, 7, 8, 10, 11, 12 under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al. (6,094,641) and further in view of Hartman et al. (6,725,208).

Regarding Claim 6, the Examiner has stated that "Ouimet et al. '641 discloses: an ecomonetric engine for modeling sales as a function of price to create a sales model, (Col. 4, lines 35-44, [demand model gives predicted sales of an item based on price]); a financial model engine for modeling costs to create a cost model, (col. 4, lines 52-53, [pricing model], which includes an activity-based costing module, Col. 2, lines 1-12, including visibility, and taking the promotional cost into account when modifying the demand model, in this case, the module is inherent with Ouimet since Ouimet's system is computer-implemented and in order to create models, a module is necessary in computerized system); and an optimization engine coupled to the econometric engine and financial model engine to receive input from the econometric engine and financial model engine, wherein the optimization engine generates the preferred set of prices, (Col. 5, lines 45-48, [using fitted, modified demand model to determine price that will maximize profits {optimization}]). Ouimet et al. '641 fails to disclose based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the sales model, but does disclose utilizing demand models to optimize prices in the abstract, lines 1-5. However, Hartman et al. discloses: Based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the sales model, (Abstract, lines 1-4, shows Bayesian modeling used for optimization, and col. 8, line 62-col. 9, line 3, utilizing the weighted average of multiple models). Hartman et al. discloses this limitation in an

analogous art for the purpose of show in that Bayesian modeling can be used to determine optimal prices. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize Bayesian modeling wherein data from at least two stores is combined to obtain a Bayesian estimation of the sales model, with the motivation of processing a particular optimization technique to determine prices."

Claim 6 has now been amended to read, in pertinent part:

"an econometric engine for modeling internal sales as a function of price to create an internal sales model based on Bayesian modeling, wherein data from at least two stores is combined to obtain a Bayesian estimation of the internal sales model, further wherein said econometric engine clusters said plurality of products into discrete sets of related products whereby each said set is made up of highly substitutable related products;

a financial model engine for modeling costs to create a cost model which includes an activity-based costing module configured to receive variable costs and fixed costs, wherein said cost model determines a total cost for each product in a given demand group in a given store for a given time period by computing a cost for each selected costing activity including labor, stocking time, transportation, receiving, inventory, bagging, checkout and invoicing." (emphasis added).

Support for the amendments can be found in the specification as filed on page 60, lines 5 – 14. As amended, Claim 6 now more distinctly claims the novel aspect of the instant invention. As discussed above, neither Ouimet et al. '641, nor Ouimet et al. '893 teach nor suggest modeling internal sales by clustering highly substitutable related products into sets for modeling. Rather, Ouimet '893 generates a demand model for individual products (not product sets) and then uses external market information to correct for noise in the product demand model. (Col 2, lines 10 – 18). The instant invention provides the advantage of relying solely upon internal product sales data to create the sales model.

The instant invention generates a sales model for the entire product set. A set of related products is defined to give a group of highly substitutable products (or items). (Specification, page 13, lines 11-13). The sales model is then generated to model sales for the group. This provides the advantage of decreasing process time and providing a more facile modeling scheme.

(See specification, page 13, line 21 – page 14, line 1). Ouimet '893 does not teach nor suggest creating a related product set sales model. Furthermore, Ouimet et al. does not disclose any structure which is capable of modeling sales for a set of highly substitutable products as disclosed by the instant invention. Known sales models, like the one disclosed in Ouimet et al., model individual product sales. The novel sales model of the instant invention, on the other hand, models group sales.

Neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the internal market share model disclosed by the instant invention. Hence, base Claim 1, and claims 2, and 3, which are dependent upon Claim 1, are allowable over the cited art.

Regarding Claim 11, the Examiner has stated that "Ouimet et al. '641 fails to disclose wherein the econometric engine divides the plurality of products into a plurality of demand groups, where at least one of said demand groups has at least two of said products in said at least one demand group, but does disclose utilizing demand models to predict prices in the abstract, lines 1-5. However, Ouimet '893 discloses divides the plurality of products into a plurality of demand groups, where at least one of said demand groups has at least two of said products in said at least one demand group, (col. 8, lines 29-35, [selecting demand model by breaking up a retailer's market into smaller groups]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that groups are used to determine demand. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to divide the plurality of products into a plurality of demand groups, where at least one of said demand groups has at least two of said products in said at least one demand group with the motivation of optimizing models according to categories."

Claim 11 has now been amended to read, in pertinent part:

"wherein the econometric engine divides the plurality of products into a plurality of discrete sets of related products whereby each said set is made up of highly substitutable related products, further ,where at least one of said discrete sets of related products is a set of at least one

product and wherein at least one of the discrete sets of related products is a set of at least two products." (emphasis added).

As discussed above, neither Ouimet et al. '893, nor Ouimet et al. '641, nor any of the cited art teach nor suggest the set of related highly substitutable products sales model nor the internal market share model disclosed by the instant invention. Hence, Claim 11 is allowable over the cited art.

Regarding Claim 12, the Examiner has stated that "Ouimet et al. '641 fails to disclose wherein the econometric engine generates a market share model for said products in said demand groups, but does disclose the utilization of a demand model to optimize prices. However, Ouimet '893 discloses: wherein the econometric engine generates a market share model for said products in said demand group, (col. 8, lines 35-37, [maximize market share by using demand model]). Ouimet '893 discloses this limitation in an analogous art for the purpose of showing that market share can be modeled and maximized by using the demand model. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to generate a market share model for said products in said demand group with the motivation of determining market shares according to categories."

Claim 12 has now been amended to recite, in pertinent part:

"the econometric engine generates a model for determining the fraction of internal sales of each discrete set of related products made up by each product." (emphasis added).

As amended, Claim 12 also more distinctly claims novel aspects of the instant invention wherein an internal model is created wherein said internal market share model determines the fraction of the internal sales of each discrete set of related products comprised by each product. The cited art, on the other hand, disclose market share models which estimate individual products' market share of the external market. This is an entirely different approach from that taken in the instant invention, and one that does not suggest the novel model presented.

In the instant invention, the market share model is the fraction of a discrete set of related product's total sales comprised by a particular product within the set. (Specification, page 68,

lines 5-8). The instant market share model does not predict a product's share of the external market, but rather the internal analysis of a product's share of its group's total sales within the user's store or chain. Combined with the sales model discussed above, this novel aspect of the instant invention allows one skilled in the art to calculate demand as a function of price and then use internal market share to calculate a product's demand from the overall related product group demand. (Specification, page 115, lines 1-3).

Neither Ouimet '893, nor Ouimet '671 teach nor suggest the demand group sales model nor the internal market share model disclosed by the instant invention. Hence, Claim 12 is allowable over the cited art.

The Examiner has rejected Claim 13 under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al. (6,094,641) as applied to claim 6 above, and further in view of Hartman et al. (6,725,208), and further in view of Ouimet et al. (6,308,162). Regarding Claim 13, the Examiner has stated that "Ouimet et al. '641 fails to disclose wherein the econometric engine determines a sales model for each demand group so that the optimization engine is able to calculate demand for said products by multiplying the market share model for said products with the sales model for the demand group to which the product belongs, (col. 2, lines 15-17, [shown that the primary objective function is combined with the constraint function and multiplied by a weighing factor, resulting in an optimized objective function, w/Col. 4, lines 2-14, [shows that market share is the primary objective function and is multiplied by a factor to get maximized gross profits, and this case, this calculation is analogous to multiplying in the claim limitation since they both yield an optimized result]). Ouimet et al. '162 discloses this limitation in an analogous art for the purpose of using a multiplication factor to yield optimized results. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to determine a sales model for each demand group so that the optimization engine is able to calculate demand for said products by multiplying the market share model for said products with the sales model for the demand group to which the product belongs with the motivation of determining an optimized solution."

Claim 13 has now been amended to recite, in pertinent part:

"the econometric engine determines an internal sales model for each discrete set of related products so that the optimization engine is able to calculate demand for said products by multiplying the fraction of sales of each discrete set of related products made up by each said product with the internal sales model for the discrete set of related products to which the product belongs." (emphasis added).

For all of the reasons discussed above, including the novel internal sales model, the market share model which determines a product's share of the internal sales of the set of related highly substitutable products, and the factoring of discrete fixed and internal costs into the financial model, none of which is discussed or suggested in the prior art, Claim 13 is now allowable over the prior art.

In sum, base claims 1, 4, and 6 have been amended and are now believed to be allowable. Dependent claims 2, 5, and 11 - 13 have been amended and are now believed to be allowable. Dependent claims 3, and 7 - 10 which depend therefrom are also believed to be allowable as being dependent from their respective patentable parent claims for at least the same reasons. Hence, Examiner's rejection of dependent Claims 2, 3, 5, 6, and 7 - 13 are rendered moot in view of the amendment to independent Claims 1, 4, and 6. New claims 14 - 16 have been added and are also believed to be allowable.

Applicants believe that all pending claims 1 – 16 are now allowable over the cited art and are also in allowable form and respectfully request a Notice of Allowance for this application from the Examiner. Applicants also enclose our Credit Card Payment Form authorizing the amount of $7900.00 to cover the RCE fee. The commissioner is authorized to charge any additional fees that may be due to our Deposit Account No. 50-2766 (Order No. DEM1P001). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at telephone number 925-570-8198.

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